

WHAT IS CLAIMED IS:

1. A fluidized bed reduction reactor having a plurality of fluidized bed reactors each with an gas distributor while receiving a reducing gas from a melter gasifier, the fluidized bed reduction reactor comprising:

5 an iron ore charging duct passing through the top of the fluidized bed reactor with a free end, the free end of the iron ore charging duct being positioned close to the center of the gas distributor;

a spiral-shaped partition weir placed over the gas distributor, the partition weir surrounding the iron ore charging duct while being spirally
10 extended from the iron ore charging duct to an inner wall of the fluidized bed reactor, the partition weir being fixed to the inner wall of the fluidized bed reactor; and

a discharge duct installed at a wall of the fluidized bed reactor to discharge the fine iron ore from the fluidized bed reactor, the discharge duct
15 being positioned near the fixed end of the partition weir;

wherein the fine iron ore charged through the iron ore charging duct is fluidized to form a fluidized bed, and reduced while spirally flowing from the center of the fluidized bed reactor to the inner wall of the fluidized bed reactor.

20 2. The fluidized bed reduction reactor of claim 1 wherein the partition weir is spirally extended from the iron ore charging duct to the inner wall of the fluidized bed reactor either in the clockwise direction or in the anti-clockwise direction.

4. The fluidized bed reduction reactor of claim 2 wherein the
5 partition weir is greater in height than the fluidized bed formed in the fluidized
bed reactor.

4. The fluidized bed reduction reactor of claim 2 wherein the partition weir is greater in height than the fluidized bed formed in the fluidized bed reactor.